IN THE CLAIMS

1. (Currently Amended) A computer-implemented method to conduct an information survey of an information resource, the method including:

~~transforming a survey niche using a computing system to produce a transformed survey niche; and~~

~~identifying at least one characterized partition of entities in the transformed survey niche, using the computing system.~~

in response to a request from a client to compute an information survey of an information resource, accessing, by an information resource manager executed in a memory by a processor of a data processing system, the information resource representing at least a single entity, wherein said request initializes a survey niche comprised of a set of at least one predicate and a first group of zero or more entities that satisfy all predicates in the set, wherein said initialization is at least one of direct initialization and indirect initialization, wherein during the direct initialization the request identifies the at least one predicate and during the indirect initialization the request identifies at least one example entity belonging to the first group;

transforming the survey niche by applying a first computable function to the set to generate a transformed set having a plurality of predicates not identical with the set prior to transformation, wherein the transformed set, when evaluated against the information resource, produces a second group of zero entities that satisfy all predicates in the transformed set;

executing an algorithm to identify at least one characterized partition of the transformed survey niche where the partition is characterized by a subset of the transformed set and where the subset is satisfiable against the information resource by producing a third group of at least one entity that satisfies all predicates in the subset, the third group comprising the at least one entity in the characterized partition; and

providing at least a portion of the at least one characterized partition of the transformed survey niche as a search option to the client.

2. (Currently Amended) The method of claim 1, wherein ~~the survey niche of the information resource represents at least one identifiable portion of the information resource.~~ the at least one characterized partition is a survey lattice element, wherein the survey lattice represents a partial order of subsets of the transformed set.

3. (Currently Amended) The method of ~~claim 1, wherein a characterization of the at least one characterized partition differentiates the characterized partition from all other characterized partitions in the survey niche.~~ claim 2, wherein the at least one survey lattice element is at least one of dominant and maximal in the survey lattice, such that adding any additional single predicate from the transformed set into the at least one satisfiable subset would cause the at least one satisfiable subset to become unsatisfiable against the information resource.

4. – 5. (Cancelled)

6. (Original) The method of claim 1, wherein results of the information survey are used to specify modification operations on the information resource surveyed.

7. (Currently Amended) The method of claim 1~~5~~, further including enabling selection of at least one entity from the third group~~a portion of at least one characterized partition by the user~~.

8. (Cancelled)

9. (Currently Amended) The method of claim 1, ~~further including:~~ wherein the first computable function applies ~~transforming the survey niche by applying~~ an operator selected ~~from the group of operators including~~that is one of a crossover operator and a mutation operator.~~;~~

~~and~~

~~forming and representing a characterized partition as a species of entities belonging to the survey niche.~~

10. (Original) The method of claim 9, wherein the operator is further selected from a group of operators including a random operator, a non-random operator, and a partly random operator.

11. (Currently Amended) The method of claim 1, ~~further including~~ wherein ~~:~~

~~the~~ the first computable function applies ~~transforming the survey niche by applying at least~~ one of a semantic operator and a conceptual structure.~~;~~

~~and~~

~~forming and representing the at least one characterized partition of entities in the transformed survey niche as a concept.~~

12. (Currently Amended) The method of claim 1, ~~further including defining the survey niche by a predicate of at~~wherein the at least one predicate is at least one of a property, attribute, trait, characteristic, function, relation, relationship, measurement, constraint, semantic

property, action, coding sequence, objective, goal, and criteria.

13. (Currently Amended) The method of claim 1, further including associating a survey monitor with the survey niche, wherein the survey monitor represents a non-constraining predicate.

14. – 15. (Cancelled)

16. (Currently Amended) The method of claim 1~~5~~, wherein ~~the forming and representing~~algorithm includes at least one operation selected from a group of operations including forming maximal satisfiable elements of the survey lattice, forming non-maximal satisfiable elements of the survey lattice, forming minimal unsatisfiable elements of the survey lattice, and forming non-minimal unsatisfiable elements of the survey lattice.

17. (Currently Amended) The method of claim 1, ~~further including~~ wherein the first computable function~~transforming the survey niche according to~~ applies at least one of a single transformation and a composite transformation.

18. (Currently Amended) The method of claim 1, ~~further including transforming the survey niche according~~ wherein the first computable function applies ~~to~~ at least one of a deterministic transformations, non-deterministic transformations, and a combination of partly deterministic and partly non-deterministic transformations.

19. (Currently Amended) The method of claim 1, ~~further including~~ wherein the first computable function is~~transforming the survey niche according to~~ at least one of adding, deleting, negating, modifying, binding, and resolving predicates.

20. (Currently Amended) The method of claim 1, further including applying a second computable function to transform ~~transforming the survey niche by~~ ~~transforming~~ the first group of at least one entity.~~set of entities in the survey niche.~~

21. (Currently Amended) The method of claim 1, ~~further including~~ wherein the at least one predicate ~~transforming a predicate that~~ is at least one of single valued, set valued, range valued, and of a complex type.

22. (Currently Amended) The method of claim 11, ~~further including~~ wherein the semantic operator is one of ~~transforming a predicate according to at least one operation selected from~~ a group of semantic transformation operators~~ions~~ including generalization/specialization, mereological transformation, relationship transformation, data type transformation, and action transformation.

23. (Cancelled)

24. (Currently Amended) The method of claim 3~~1~~, further including selecting the first computable function ~~transforming a set of predicates to generate a number of maximal satisfiable survey lattice elements~~ such that the~~a~~ number of survey lattice elements that are at least one of dominant and maximal ~~maximal satisfiable survey lattice elements of the~~

~~transformed survey lattice is~~ are bounded by at least one of an upper bound and~~,~~ a lower bound~~, or an upper bound and a lower bound~~.

25. (Currently Amended) The method of claim 3~~1~~, further including selecting the first computable function~~transforming a set of predicates to generate a number of minimal unsatisfiable survey lattice elements~~ such that the~~a~~ number of ~~minimal~~ unsatisfiable survey lattice elements that are at least one of minimal and dominated are bounded by at least one of ~~the transformed survey lattice is bounded by~~ an upper bound and ~~,~~ a lower bound~~, or an upper bound and a lower bound~~.

26. (Currently Amended) The method of claim 2~~1~~, further including transforming the~~a~~ set of predicates such that the transformed set of predicates at least partly matches a set of predicates for which survey lattice elements are already formed.

27. (Previously Presented) The method of claim 1, further including transforming the survey niche in order to achieve transformation goals from a group including a specific or general contraction, a specific or general expansion, and a specific or general shifting of the survey niche.

28. (Currently Amended) The method of claim 1, further including selecting the first computable function~~transforming a set of predicates so as~~ to achieve differentiation of entities that satisfy subsets of the transformed set~~partitions and entities~~.

29. (Cancelled)

30. (Currently Amended) The method of claim ~~29~~, further including performing at least one operation on the survey lattice, in whole or in part, selected from the group of operations including representing the survey lattice, localizing the survey lattice, distributing the survey lattice, replicating the survey lattice, storing the survey lattice, retrieving the survey lattice, forming the survey lattice on-demand, using survey lattices singly or in plurality, indexing the survey lattice, presenting the survey lattice to the user, enabling the user to interact with the survey lattice, and enabling the user to communicate the survey lattice.

31. (Currently Amended) The method of claim ~~29~~, further including:

identifying one or more facts for the satisfiability of each predicate;

grouping the one or more facts by point of evidence to generate one or more groups of facts;

sorting the one or more groups of facts by a number of predicates satisfied;

rejecting duplicate groups of facts from the one or more groups of facts; and

using at least one of group dominance and group containment ~~containment~~ of the one or more groups of facts as a partial order of the lattice.

32. (Previously Presented) The method of claim 31 wherein to form a maximal satisfiable element of a survey lattice, the method further includes rejecting groups from the one or more groups of facts those that are at least one of contained and dominated.

33. (Previously Presented) The method of claim 31 wherein to form minimal unsatisfiable elements of a survey lattice, the method further includes:

identifying one or more negative facts for unsatisfiability of each predicate;

grouping the one or more negative facts by point of evidence to generate one or more groups of negative facts;

sorting, in ascending order, the one or more groups of negative facts by a number of negative facts in a respective group;

rejecting groups of negative facts that contain a same subset of the set of predicates;

rejecting groups of negative facts for which another group is a subset from the one or more groups of negative facts; and

rejecting groups of negative facts that are subsets of maximal satisfiable predicate lattice elements.

34. (Previously Presented) The method of claim 31, wherein the forming of the survey lattice, in whole or in part, includes performing at least one operation on a fact structure selected from a group of operations including generating, storing, applying, and maintaining fact structures.

35. (Original) The method of claim 34, wherein the fact structure includes at least one of a fact table and a fact index.

36. (Previously Presented) The method of claim 31, wherein the forming of the survey lattice, in whole or in part, includes performing at least one operation on a bitmap index selected from a group of operations including generating, storing, applying, and maintaining

bitmap indexes.

37. (Currently Amended) The method of claim 2~~15~~, further including:

putting predicates which are atoms of a survey lattice into a strict order, using a computing system; and

associating a survey lattice element with a predicate in the strict order using the computing system, where the associated survey lattice element contains the predicate.

38. (Currently Amended) The method of claim 2~~15~~, further comprising augmenting an index by associating a survey lattice element with an index entry, wherein the survey lattice element contains the index entry.

39. (Currently Amended) The method of claim 2~~15~~, further comprising augmenting a conceptual structure by associating a survey lattice element with a component of a conceptual structure, wherein the survey lattice element contains the component of the conceptual structure.

40. (Currently Amended) The method of claim 2~~15~~, further comprising augmenting a category system by associating a survey lattice element with a category of a category system, wherein the survey lattice element contains the category of the category system.

41. (Currently Amended) The method of claim 2~~15~~, further comprising augmenting a database system by associating a survey lattice element with an attribute of a database system,

wherein the survey lattice element contains the attribute of the database system.

42. (Cancelled)

43. (Cancelled)

44. (Currently Amended) A computer-implemented system to conduct an information survey of an information resource, the system including:

a processor;

a memory coupled to the processor; and

an information resource manager executed in the memory by the processor to access the information resource and at least a single entity represented by the information resource,

a survey niche manager executed in the memory by the processor to accept a client request to initialize a survey niche comprised of a set of at least one predicate and a first group of zero or more entities that satisfy all predicates in the set, wherein said initialization is at least one of direct initialization and indirect initialization, wherein during the direct initialization the request identifies the at least one predicate and during the indirect initialization the request identifies at least one example entity belonging to the first group,

a transformation manager executed in the memory by the processor to apply a first computable function to the set to generate a transformed set having a plurality of predicates not identical with the set prior to transformation, wherein the transformed set, when evaluated against the information resource, produces a second group of zero entities that satisfy all predicates in the transformed set,

a partition manager executed in the memory by the processor to execute an algorithm to identify at least one characterized partition of the transformed survey niche where the partition is characterized by a subset of the transformed set and where the subset is satisfiable against the information resource by producing a third group of at least one entity that satisfies all predicates in the subset, this third group comprising the at least one entity in the characterized partition, and to provide at least a portion of the at least one characterized partition of the transformed survey niche as a search option to the client.

~~A system to conduct an information survey, the system including:~~

~~an information resource manager to identify a plurality of information entities, the plurality of information entities being associated with the survey niche;~~

~~a survey niche manager to manage at least one generation of a survey niche;~~

~~a partition manager to identify at least one characterized partition associated with the survey niche; and~~

~~a transformation manager to manage transformation of the survey niche.~~

45. (Cancelled)

46. (Original) The system of claim 44, wherein the system includes at least one manager selected from a group of managers including:

a survey manager to maintain survey configuration information and manage multiple survey generations;

a session manager to manage survey sessions and obtain services from other managers;

a predicate manager to manage terms, concepts, and predicates, and perform disambiguation;

a user manager to manage user information;

a persistence manager to store and retrieve information for other managers;

an integration manager to connect with external systems other than information resources; and

a user interface manager for creating and managing displays and handling user input.

47. (Previously Presented) The system of claim 44, wherein the partition manager is a survey lattice manager to generate a survey lattice element.

48. (Previously Presented) The system of claim [[]]45, wherein a survey lattice element augments an information structure where the information structure belongs to a group including an index, a conceptual structure, a database, and a category system.

49. (Previously Presented) The system of claim 44, further including a user interface subsystem for information surveying, the subsystem including::

a means for capturing user input to initialize a survey niche;

and a displaying means for presenting a plurality of characterized partitions to the user.

50. (Cancelled)

51. (Previously Presented) The user interface subsystem of claim 49, wherein the interface includes a means for presenting at least one survey lattice element.

52. (Previously Presented) The user interface subsystem of claim 49, wherein the interface includes a survey lattice table for presenting at least one survey lattice element.

53. (Previously Presented) The system of claim 47, further including a data structure, wherein survey lattice elements are based on a source from a group of sources including an index, a conceptual structure, a database, and a category system.